SBF-325 SERVICE NOTES

First Edition

● SPECIFICATIONS

● **Input level**
 L: +4dBm (+20dBm max)
 H: −16dBm (0dBm max)

● **Input impedance:** (13kΩ)
 over 100k ohms

● **Output level**
 H: +4dBm (+20dBm max)
 L: −16dBm (0dBm max)

● **Output impedance:** less than 2kΩ

● **Delay time**
 FLANGER mode: 0.5ms ~ 15ms
 CHORUS mode: 5ms ~ 15ms

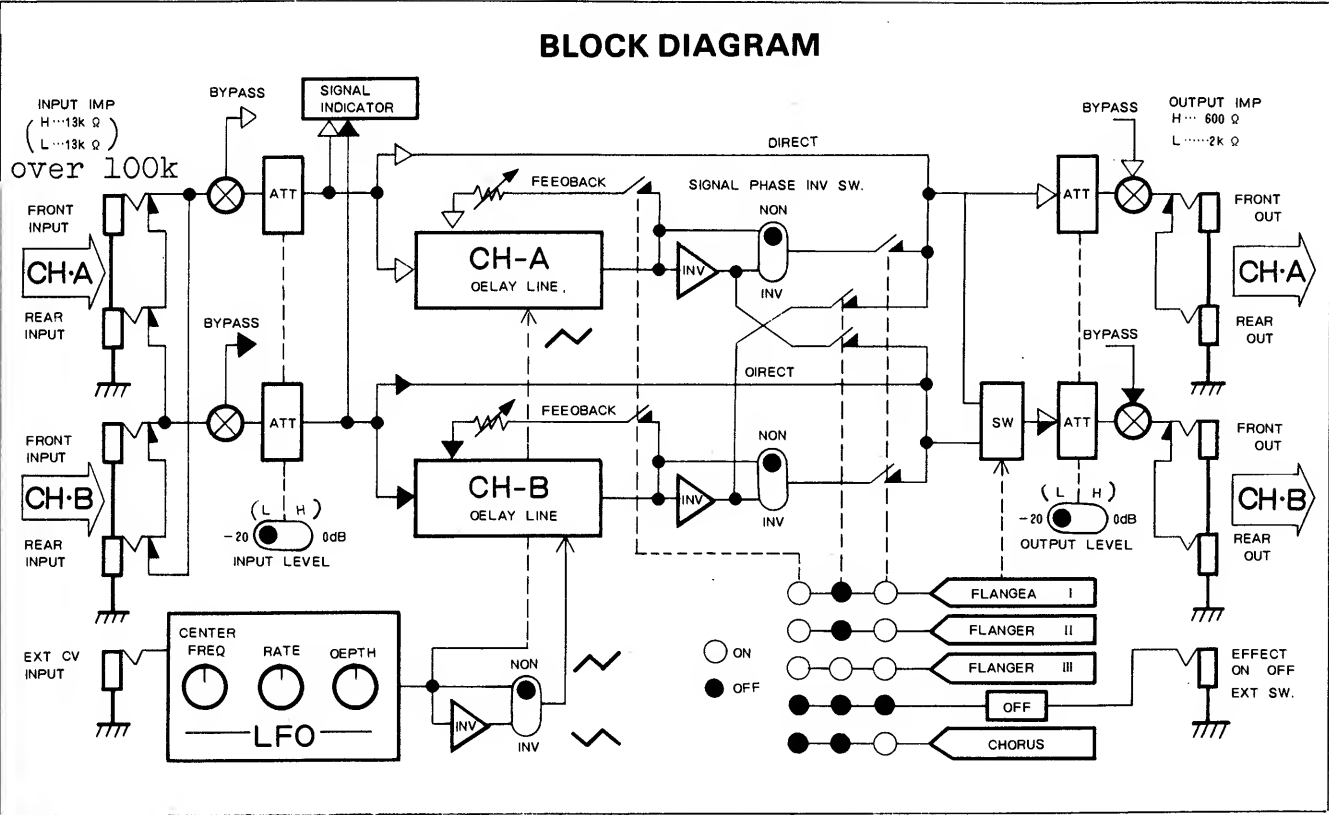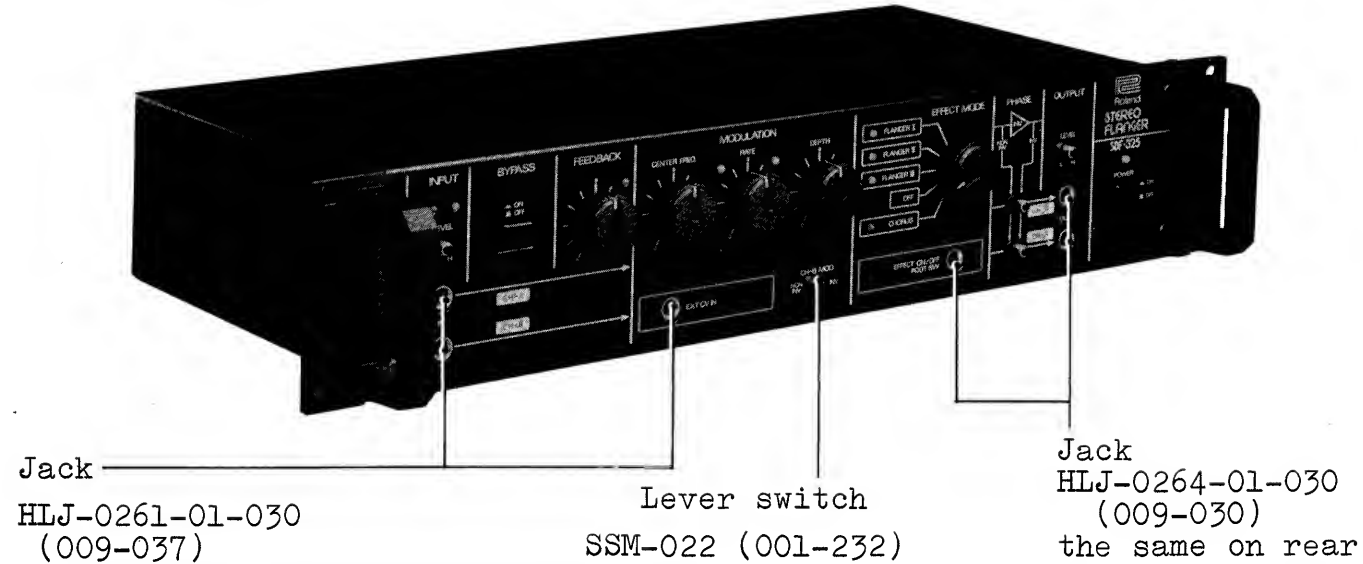● **Frequency response (Delay line):**
 75Hz ~ 14kHz (±3dB)

● **Noise level:** less than −70dBm

● **Modulation speed:** 0.2s ~ 40s
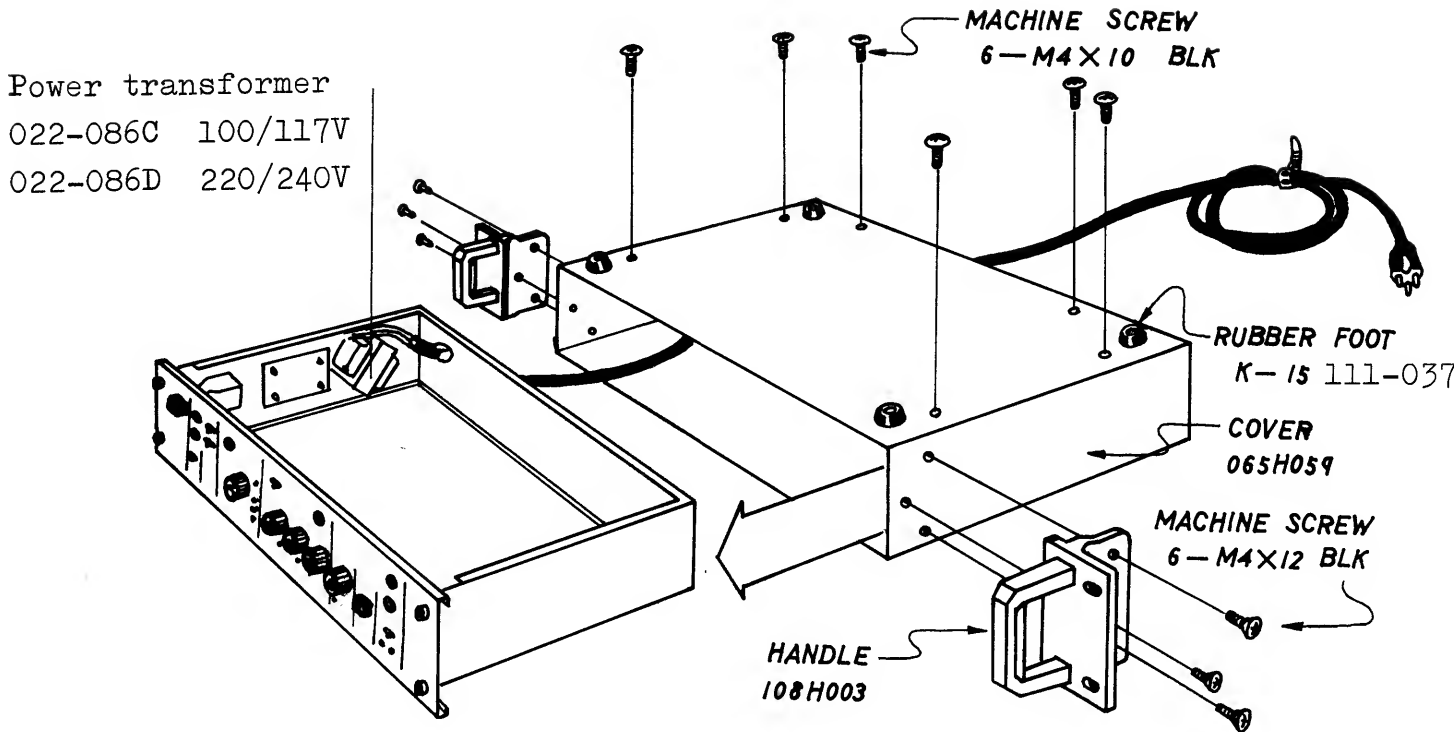 [0dBm = 0.775V RMS]

● **Power consumption:** 10W

● **Dimensions:**
 482(W) × 92(H) × 247(D) mm
 19" rack mount EIA-2U

● **Weight:** 4.5kg

Jack
HLJ-0261-01-030
(009-037)

Lever switch
SSM-022 (001-232)

Jack
HLJ-0264-01-030
(009-030)
the same on rear

BLOCK DIAGRAM

SBF-325 DISASSEMBLY

Power transformer
022-086C 100/117V
022-086D 220/240V

MACHINE SCREW
6 — M4 × 10 BLK

RUBBER FOOT
K — 15 111-037

COVER
065H059

MACHINE SCREW
6 — M4 × 12 BLK

HANDLE
108H003

Switch
SDG5P-001-1 100V
 (001-215)

SDG5P-001-2 117V
 (001-216)

SDG5P-502 220/240V
 (001-217)

Button no.9 black
 (016-009)

CHASSIS
061H089

KNOB
016-043

MACHINE SCREW
10 — M2 × 6

FRONT PANEL
072H055

TOOTHED LOCK WASHERS 4 — M4 BLK

HEXAGON SOCKET HEAD BOLTS
4 — M4 × 6 BLK
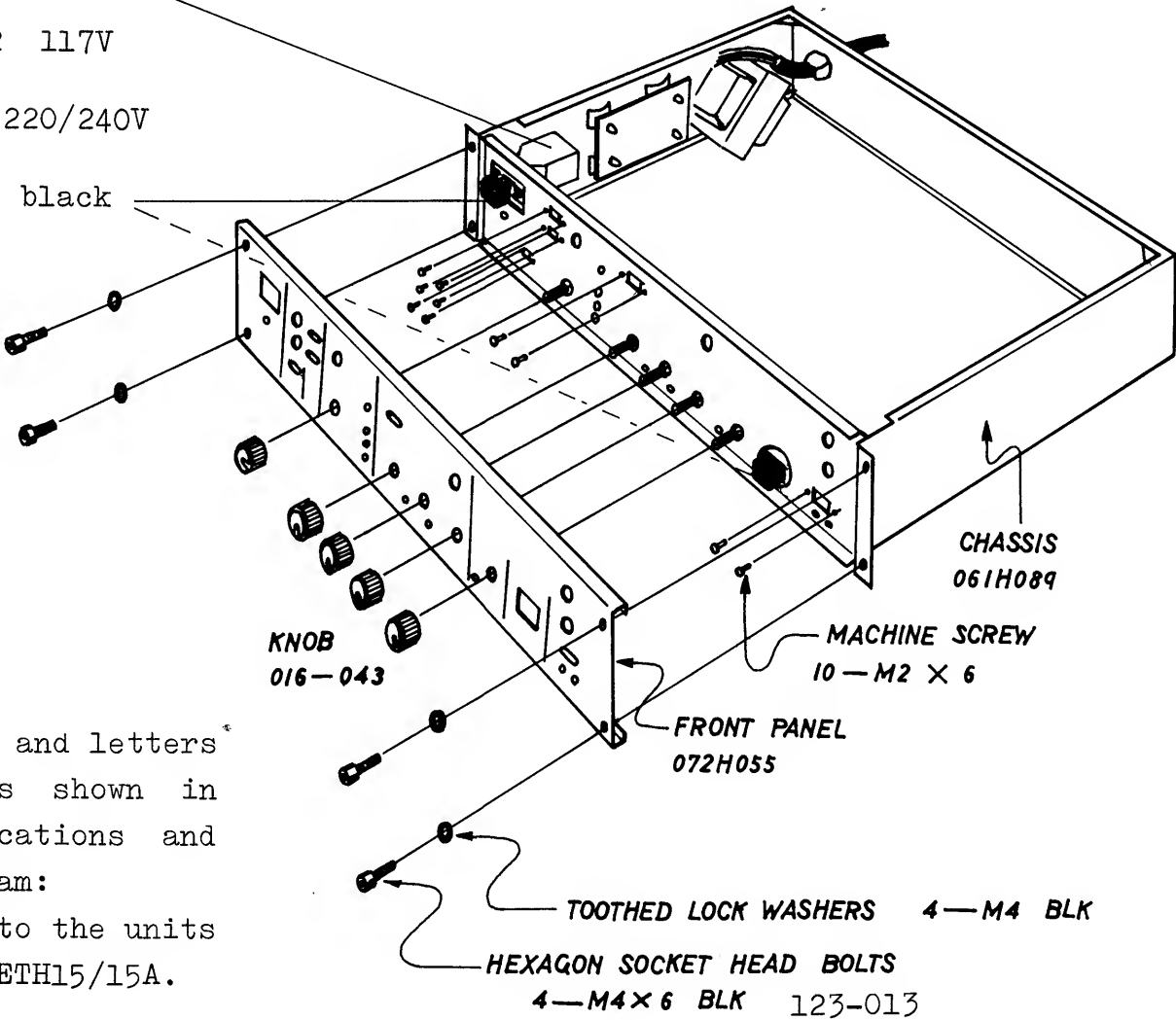
The figures and letters in parentheses shown in the Specifications and Block Diagram: applicable to the units containing ETH15/15A.

123-013

Roland

BYPASS	FEEDBACK	CENTER FREQ	RATE	DEPTH	EFFECT MODE
SUE-12-82	EWKEPAK20C14	EVHCCAK20B54	EWK2TAK20583	EWKEPAK20B14	SRZW65N
(001-292)	10kC x 2	50kB	100kA x 2	10kB x 2	(001-290)
	(026-352)	(028-483)	10kA x 1	(026-342)	
			(026-360)		

2SC 1815 GR
2SB 1015 GR
2SK 30 GR
M 8555
ZDi
CAPACITOR
CAPACITOR (NON POLAR)

Jumpers on the foil side
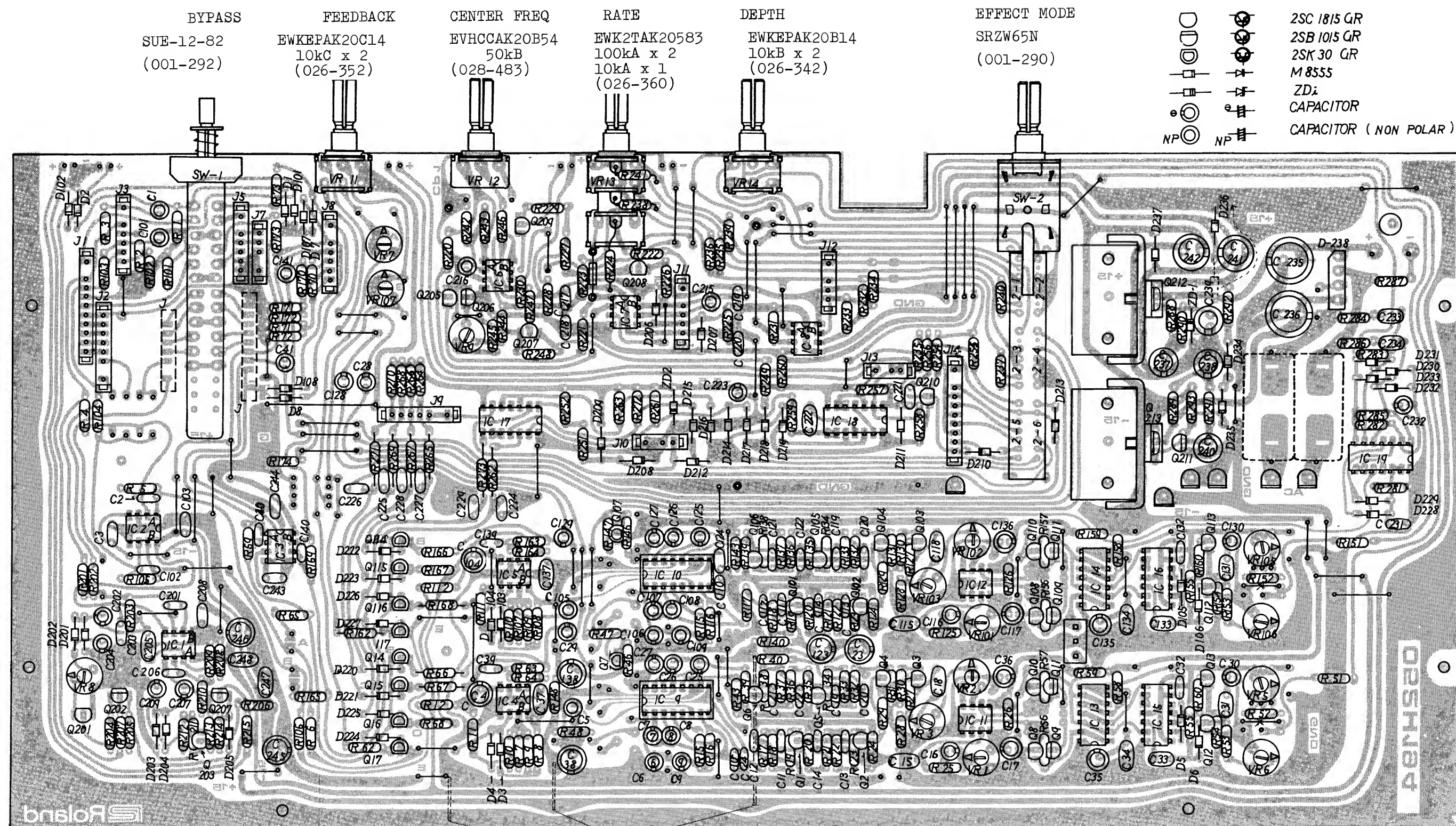
ETH-15(151H-15) (PCB 052H194)

For replacement, compatible ETH-15A is available.

(ETH15A: ETH15 with roadmap)

Q1~6,8,10,13,201,203,205,208,209,210	2SC-1815GR
101~106,108,110,113	
Q9,11,12,109,111,112,202,204,206,211	2SC-1015GR
Q7,-107,14~17,114~117,	2SK-30AGR
Di	M8555
D238	1B4B41
ZDi	HZ 161L

Q 212	2SD-526Y
Q 213	2SB-596Y
ZD2	HZ 6A3
IC1-6,8	µPC-4558
IC 9,10	NE-570
IC 11,12	MN-3007
IC 13,14	TC-4013BP
IC 15,17	TC-4069UBP
IC 18,19	TC-4001BP
IC7	LF353

022-086 D

(BRN) RED
(BRN) (RED)
.047
WHT

AC 240V (220V)

POWER SW. SDG-5P-502

220,240V

(S) 125mA T
T125mA 250V
ECG-E2A
473 MCS

OPH 085 A

117V

MG P-0-25A CSA
0-25A 250V
ECQ-U1A
473 MC
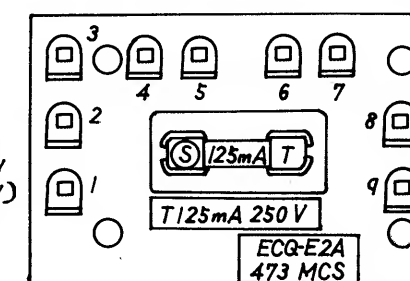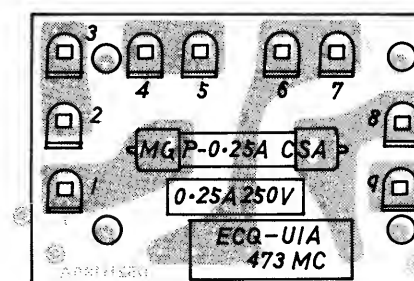
(see OVERALL DIAGRAM)

OPH 084 A

Circuits in this dotted line are applicable only for ETH15/15A.
For ETH15B see page 5.

DIRECT SIG
*( ) for ETH15B
MIX

BYPASS

(68K)
FEEDBACK
(100K)

FRONT INPUT JACK
CH-A

REAR INPUT JACK

LIMITER — COMPRESSOR — LPF — DELAY — AMP — LPF — EXPANDER

FET SWITCHES

	B·C	D	E
FLANGER I	ON	OFF	ON
" II	ON	OFF	ON
" III	ON	ON	ON
OFF	OFF	OFF	OFF
CHORUS	ON	OFF	OFF

BYPASS
CH-A
FRONT OUT JACK
REAR OUT JACK
OUTPUT ATT H (0) L (-20)

MN 3007
6.15 Vdc
8.4 Vdc

VR1, VR101 — BBD BIAS ADJ.
VR2, VR102 — CLOCK CANCELER — BBD
VR3, VR103 — GAIN ADJ.
VR5, VR105 — CLOCK WIDTH ADJ. — VCO
VR6, VR106 — CLOCK FREQ. ADJ.
VR7, VR107 — MAXIMUM FEEDBACK LEVEL ADJ.

CH-A DELAY LINE
BBD CLOCK 30μS ~ 1μS
VCO
INPUT LEVEL INDICATOR
OVER LEVEL ADJ.
OVER LOAD
LOAD
INPUT ATT

REAR INPUT JACK
CH-B
FRONT INPUT JACK

FEEDBACK

CH-B DELAY LINE
BBD CLOCK 25μS ~ 0.8μS

(68K)
(100K)

REAR OUT JACK
BYPASS
CH-B
FRONT OUT JACK

JACK BOTTOM VIEW

TRANSISTORS PNP 2SA1015GR
NPN 2SC1815GR
FET 2SK30AGR
OPERATIONAL AMP μPC4558 LF353
ALL DIODES ARE M8555
LED RED TLR124
GRN TLG124A

4001 4069 4558

IC7A, IC7B
LF353

EXT CV. IN
LFO
RATE

MODULATION CONTROL

EFFECT MODE SELECTOR
EXT EFFECT ON/OFF

MODULATION INV NON
CH-A
CH-B

FLANGER I
FLANGER II
FLANGER III
OFF
CHORUS

CENTER FREQ
DEPTH
CHORUS MODE
CONTROL VOLTAGE
CENTER FREQ. VR

MUTING PULSE 100mS
FEEDBACK IND.
±5V ADJ.
NON INV
CH-B MODULATION INV

MODE SELECTOR

INV NON CH-A SIGNAL PHASE INV
INV NON CH-B SIGNAL PHASE INV

IC19 TC4001BP
POWER ON/OFF MUTING

PILOT LAMP
POWER SW
+15V
-15V

022-086 C

AC VOLT	F101 · 102	POWER TRANS	F001
100V·117V	SHORT	022-086C	100V→0·3A 117V→0·25A
220V·240V	Ⓢ500mAT	022-086D	Ⓢ125mAT

SBF325 SCHEMATIC DIAGRAM

ADJUSTMENT

		CHECK POINT	ADJ.	SETTING & STANDARD VALUE		
(1)	POWER SUPPLY					
	100V · 220V	B 1			+23·0V	
	" · "	B 2			−22·5V	
	117V · 240V	B 1			+28·3V	
	" · "	B 2			−27·8V	
	100V·117V·220V·240V	B 3			+14·7 ∼ 15·4V	
	" · " · " · "	B 4			−14·5 ∼ 15·2V	
(2)	LFO ADJ.	CP-1	VR 9		−5·00V ± 0·05V	
	LFO RATE (Check only)	CP-2		RATE →0	T=40S ∼ 44S	
				" →10	T=0·2S	
(3)	VCO ADJ.			DEPTH →0	FLANGER ← MODE → CHORUS	
	CH-A	CP-6A	VR 5 6	CENTER FQ.→0	T = 30μS	T = 30μS
				" →10	T = 1μS	T = 9∼10μS
	CH-B	CP-6B	VR105 106	" →0	T = 25μS	T = 25μS
				" →10	T = 0·8μS	T = 7·4∼8μS
(4)	BBD BIAS ADJ.			DEPTH →0		
				MODE -- FLANGER I Feed signal (CH-A or B input jack) large enough to cause slight clipping.		
	1 CH-A	CP-6A	CENTER		CLOCK ÷ 10μS	
	3 CH-B	CP-6B	FQ		" ÷ 8μS	
	2 CH-A	CP-5	VR 1			GOOD
	4 CH-B	CP-4	VR 101			GOOD
(5)	BBD. CLOCK LEAK CANCEL CH-A	CP-5	VR 2			
	CH-B	CP-4	VR 102			GOOD

ETH015

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(6) DELAY LINE GAIN SET

FEEDBACK→0
DEPTH→0
DIRECT SIG→CUT

CENTER FREQ (CLOCK SETTING)
(TP6A) 10 μS----CH-A
(TP6B) 8 μS----CH-B

INPUT 1KHZ SINE WAVE −20dBm

GAIN ADJ. ⊚ VR 3 ---- CH-A
⊚ VR 103 ---- CH-B

OUTPUT −1dBm

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(7) INPUT LEVEL INDICATOR

INPUT LEVEL SW. →H
INPUT 1KHZ SINE WAVE

ADJ. ⊚ VR 8

	NO SIGNAL	SIG < −1dB	SIG = −1dB	SIG > 0dB
LED	GRN ● ● RED			

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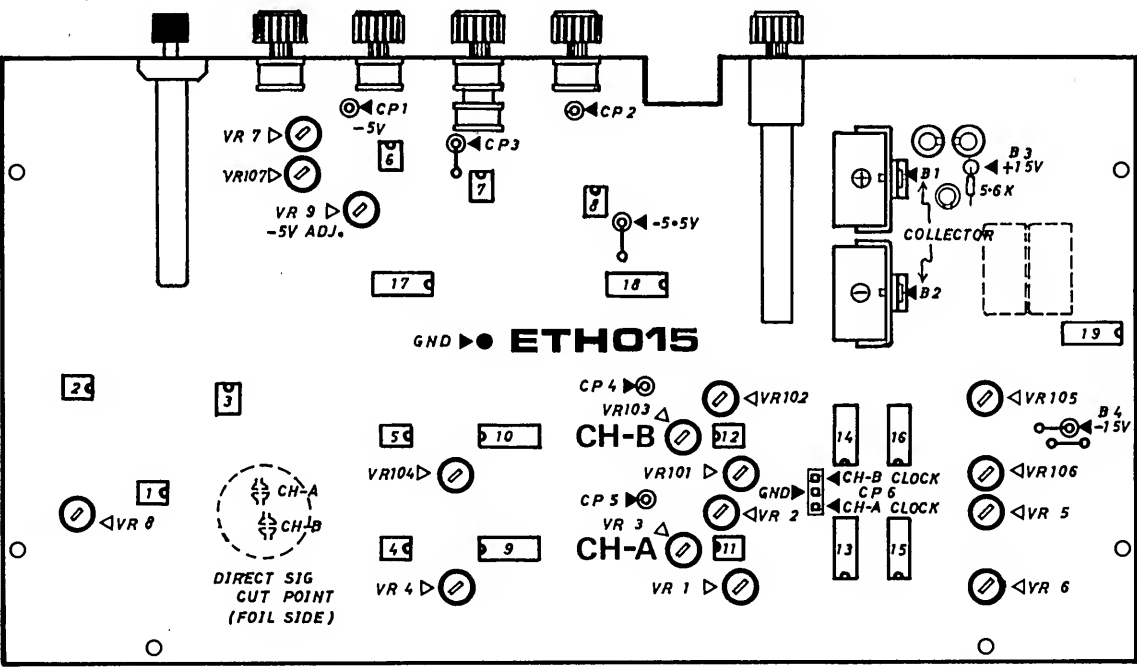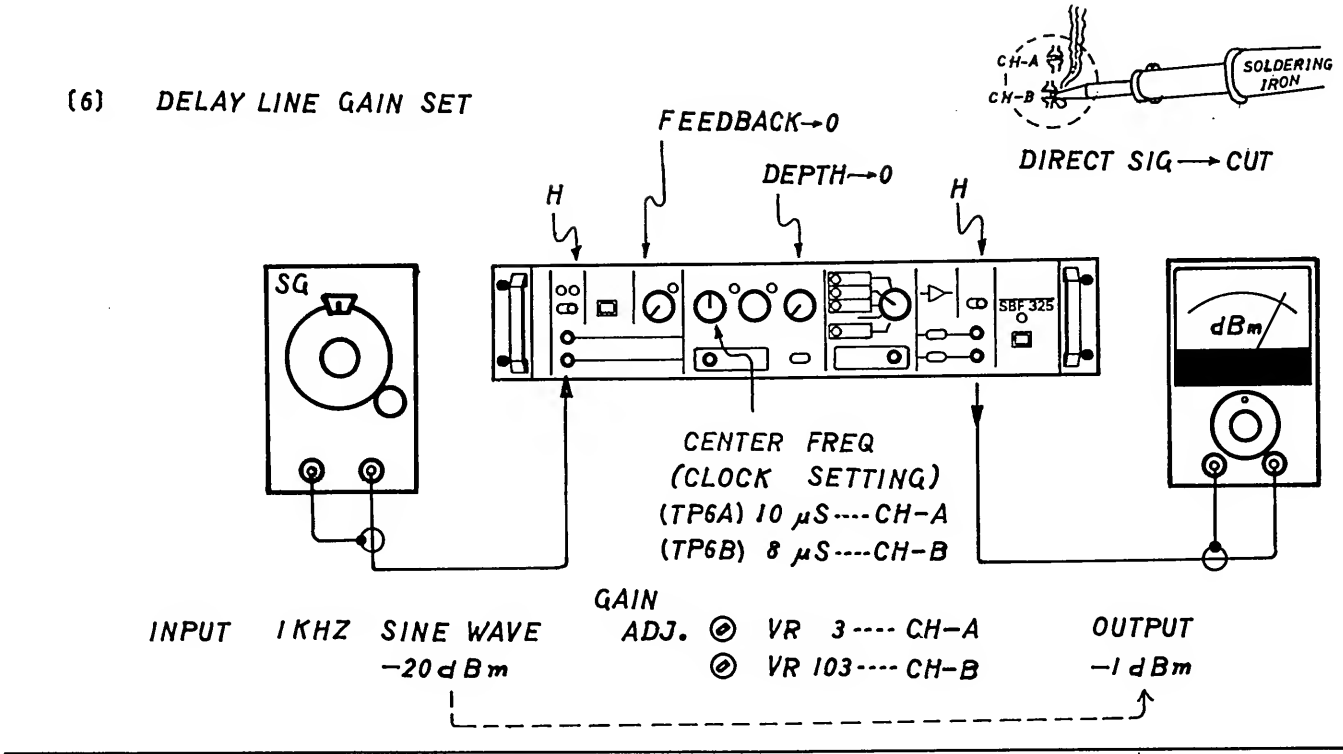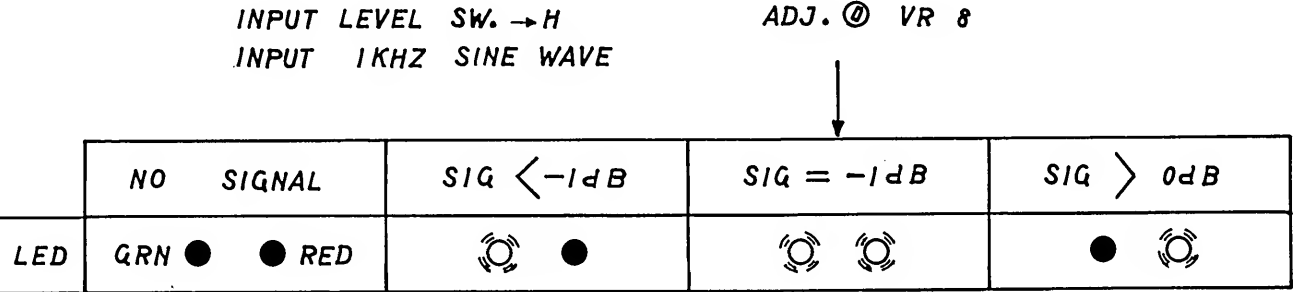
(8) FEEDBACK LEVEL

FEEDBACK VR→10
DEPTH VR→10
RATE VR→0

CHANNEL A

Set VR-7 to the point just before oscillation occurs.
Check that oscillation does not occur over the entire rotaion range of the front panel CENTER FREQUENCY control.

CHANNEL B

Set VR-107 in the same manner as VR-7.

PARTS LIST

072H055	Panel	H55
061H069	Chassis	H89
065H059	Cover	H59
108H003	Handle	H3
111-037	Rubber foot	K-15
016-043	Knob no.43	rotary
016-009	Button no.9	black, push
009-051	Jack HLJ0261-01-010 w/sw.	
009-030	Jack HLJ0264-01-030	
022-086C	Power transformer 100/117V	
022-086D	Power transformer 220/240V	

SWITCH

001-291	SUE-12-4	push
001-290	SRZW65N	rotary
001-215	SDG5P-001-1 power 100V	
001-216	SDG5P-001-2 power 117V	
001-217	SDG5P-502 power 220/240V	
001-232	SSM022	slide

SEMICONDUCTOR

017-016	2SK30A-GR	FET
017-155	2SA1015-GR	
017-106	2SC1815-GR	
017-128	2SB596-Y	
017-090	2SD526-Y	
018-081	1B4B41 rectifier bridge	
018-087	M8555 diode	
018-108	HZ161L zener 15.3-15.9V	
018-109	HZ6A3 zener 5.4-5.7V	
019-028	TLR-124 LED red	
019-029	TLG-124A LED green	
020-097	μPC4558	
020-051	TC4001BP	
020-041	TC4013BP	
020-084	TC4079UBP	
020-213	MN3007 BBD	
020-098	NE570	
020-208	LF353N dual FET op amp	

PCB

151H015A	ETH15A (PCB 052H194A)	
052H195	LED mounting less parts	
052H225	LED mounting less parts	
149HC83A	OPH83A terminal 100V	
149H084A	OPH84A (052H185A) 117V	
149H085A	OPH85A	220/240V

FUSE

008-050	MGP 0.25A prim. 117V	
008-057	CEE T125mA prim.220/240V	
008-063	CEE T500mA sec. 220/240V	

POTENTIOMETER

026-360	EWK2TAK20 583 w/center tap 100kA x 2 + 10kA	
026-342	EWK-EPAK20B14	10kB x 2
026-352	EWK-EPAK20C14	10kC x 2
028-483	EVHCCAK20B54	50kB
030-461	SR19R 2.2kB	trimmer
030-463	SR19R 4.7kB	trimmer
030-465	SR19R 10kB	trimmer
030-471	SR19R 100kB	trimmer
030-481	SR19R 250kB	trimmer

CONNECTOR

Housing		Wafer terminal
EMCB0315A51	3p	EMCS0 350
EMCB0320A51	3p	
EMCB0415A51	4p	EMCS0 450
EMCB0440A51	4p	
EMCB0515A51	5p	EMCS0 550
EMCB0610A51	6p	EMCS0 650
EMCB0640A51	6p	
EMCB0725A51	7p	EMCS0 750
EMCB0920A51	9p	EMCS0 950
EMCB1010A51	10p	EMCS1050

OTHERS

120-015	Sleeve nut no.15 3x18mm	
042-041	Terminal(earth) no.41	
012-003	Fuse clip TF-758	
012-049	IC socket ICC-03-016-350T 16-pin dual in-line	
048-032	Heat sink no.32	
065-261	Cover no.61 slide switch	
123-013	Hexagon socket head bolt 4 x 1mm	

ETH-15B (151H-15B)

(PCB 052H194B)

Components added and revised are identified
by indicating their values.
The rest left unchanged.